

DENON

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I: MANUAL DRW840
5440410100 000

STEREO CASSETTE TAPE DECK

DRW-840

OPERATING INSTRUCTIONS

BEDIENUNGSANLEITUNG

MODE D'EMPLOI

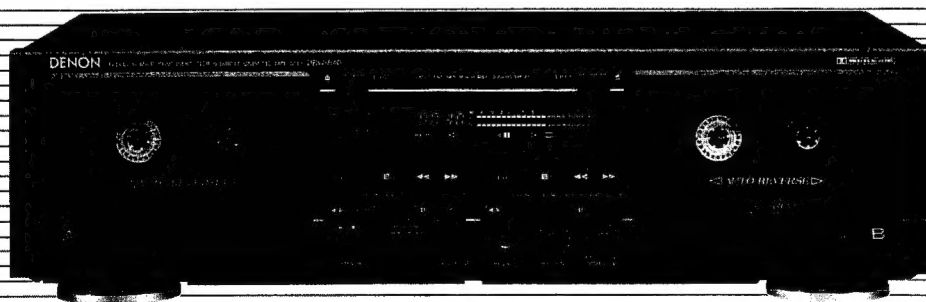
ISTRUZIONI PER L'USO

INSTRUCCIONES DE OPERACION

GEBRUIKSAANWIJZING

BRUKSANVISNING

INSTRUÇÕES DE OPERAÇÃO



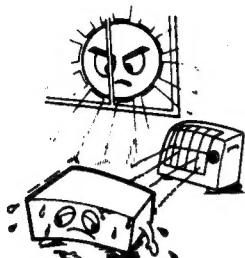
FOR ENGLISH READERS
FÜR DEUTSCHE LESER
POUR LES LECTEURS FRANCAIS
PER IL LETTORE ITALIANO

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PARA LECTORES DE ESPAÑOL
VOOR NEDERLANDSTALIGE LEZERS
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PARA LEITORES PORTUGUESES

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**NOTE ON USE/HINWEISE ZUM GEBRAUCH/OBSERVATIONS RELATIVES A L'UTILISATION
NOTE SULL'USO/NOTAS SOBRE EL USO/ALVORENS TE GEBRUIKEN/OBSERVERA
OBSERVAÇÕES QUANTO AO USO**



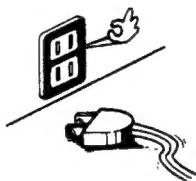
- Avoid high temperatures
Allow for sufficient heat dispersion when installed on a rack.
- Vermeiden Sie hohe Temperaturen
Beachten Sie, daß eine zureichende Luftzirkulation gewährleistet wird, wenn das Gerät auf ein Regal gestellt wird.
- Eviter des températures élevées
Tenir compte d'une dispersion de chaleur suffisante lors de l'installation sur une étagère.
- Evitate di esporre l'unità a temperature alte.
Assicuratevi che ci sia un'adeguata dispersione del calore quando installate l'unità in un mobile per componenti audio.
- Evite altas temperaturas
Permite la suficiente dispersión del calor cuando está instalado en la consola.
- Vermijd hoge temperaturen.
Zorg voor een degelijk hitteafvoer indien het apparaat op een rek wordt geplaatst.
- Undvik höga temperaturer.
Se till att det finns möjlighet till god värmeavledning vid montering i ett rack.
- Evite temperaturas altas
Conceda suficiente dispersão de calor quando o equipamento for instalado numa prateleira.



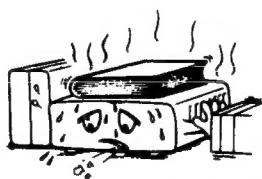
- Handle the power cord carefully.
Hold the plug when unplugging the cord.
- Gehen Sie vorsichtig mit dem Netzkabel um.
Halten Sie das Kabel am Stecker, wenn Sie den Stecker herausziehen.
- Manipuler le cordon d'alimentation avec précaution.
Tenir la prise lors du débranchement du cordon.
- Manneggiare il filo di alimentazione con cura.
Agitare per la spina quando scollegate il cavo dalla presa.
- Maneje el cordón de energía con cuidado.
Sostenga el enchufe cuando desconecte el cordón de energía.
- Hanteer het netsnoer voorzichtig.
Houd het snoer bij de stekker vast wanneer deze moet worden aan- of losgekoppeld.
- Hantera nätkabeln varsamt.
Håll i kabeln när den kopplas från el-uttaget.
- Manuseie com cuidado o fio condutor de energia.
Segure a tomada ao desconectar o fio.



- Keep the set free from moisture, water, and dust.
- Halten Sie das Gerät von Feuchtigkeit, Wasser und Staub fern.
- Protéger l'appareil contre l'humidité, l'eau et la poussière.
- Tenete l'unità lontana dall'umidità, dall'acqua e dalla polvere.
- Mantenga el equipo libre de humedad, agua y polvo.
- Laat geen vochtigheid, water of stof in het apparaat binnendringen.
- Utsätt inte apparaten för fukt, vatten och damm.
- Mantenha o aparelho livre de qualquer umidade, água ou poeira.

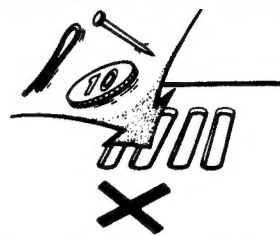


- Unplug the power cord when not using the set for long periods of time.
- Wenn das Gerät eine längere Zeit nicht verwendet werden soll, trennen Sie das Netzkabel vom Netzstecker.
- Débrancher le cordon d'alimentation lorsque l'appareil n'est pas utilisé pendant de longues périodes.
- Disinnestate il filo di alimentazione quando avete l'intenzione di non usare il filo di alimentazione per un lungo periodo di tempo.
- Desconecte el cordón de energía cuando no utilice el equipo por mucho tiempo.
- Neem altijd het netsnoer uit het stopcontact wanneer het apparaat gedurende een lange periode niet wordt gebruikt.
- Koppla ur nätkabeln om apparaten inte kommer att användas i lång tid.
- Desligue o fio condutor de força quando o aparelho não tiver que ser usado por um longo período.



*(For sets with ventilation holes)

- Do not obstruct the ventilation holes.
- Die Belüftungsöffnungen dürfen nicht verdeckt werden.
- Ne pas obstruer les trous d'aération.
- Non coprite i fori di ventilazione.
- No obstruya los orificios de ventilación.
- De ventilatieopeningen mogen niet worden beblokkeerd.
- Tapp inte till ventilationsöppningarna.
- Não obstrua os orifícios de ventilação.



- Do not let foreign objects in the set.
- Keine fremden Gegenstände in das Gerät kommen lassen.
- Ne pas laisser des objets étrangers dans l'appareil.
- E' importante che nessun oggetto è inserito all'interno dell'unità.
- No deje objetos extraños dentro del equipo.
- Laat geen vreemde voorwerpen in dit apparaat vallen.
- Se till att främmande föremål inte tränger in i apparaten.
- Não deixe objetos estranhos no aparelho.



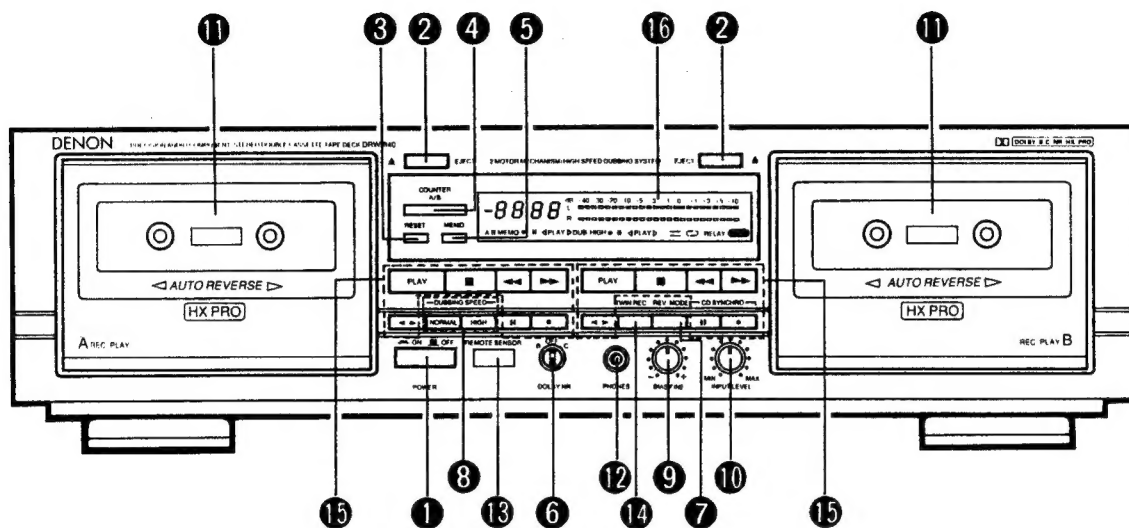
- Do not let insecticides, benzene, and thinner come in contact with the set.
- Lassen Sie das Gerät nicht mit Insektiziden, Benzin oder Verdünnungsmitteln in Berührung kommen.
- Ne pas mettre en contact des insecticides, du benzène et un diluant avec l'appareil.
- Assicuratevi che l'unità non venga in contatto con insetticidi, benzolo o solventi.
- No permita el contacto de insecticidas, gasolina y diluyentes con el equipo.
- Laat geen insektenverdelgende middelen, benzine of verfverdunder met dit apparaat in contact komen.
- Se till att inte insektsmedel på spraybruk, bensen och thinner kommer i kontakt med apparatens hölje.
- Não permita que inseticidas, benzina e dissolvente entrem em contacto com o aparelho.



- Never disassemble or modify the set in any way.
- Versuchen Sie niemals das Gerät auseinander zu nehmen oder auf jegliche Art zu verändern.
- Ne jamais démonter ou modifier l'appareil d'une manière ou d'une autre.
- Non smontate mai, nè modificate l'unità in nessun modo.
- Nunca desarme o modifique el equipo de ninguna manera.
- Nooit dit apparaat demonteren of op andere wijze modificeren.
- Ta inte isär apparaten och försök inte bygga om den.
- Nunca desmonte ou modifique o aparelho de alguma forma.

FRONT PANEL
FRONTPLATTE
PANNEAU AVANT
PANNELLO ANTERIORE

PANEL FRONTAL
VOORPANEEL
FRAMSIDA
PAINEL FRONTAL



IMPORTANT TO SAFETY

WARNING:

TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

CAUTION:

1. Handle the power supply cord carefully

Do not damage or deform the power supply cord. If it is damaged or deformed, it may cause electric shock or malfunction when used. When removing it from wall outlet, be sure to remove by holding the plug attachment and not by pulling the cord.

2. Do not open the top cover

In order to prevent electric shock, do not open the top cover. If problems occur, contact your DENON DEALER.

3. Do not place anything inside

Do not place metal objects or spill liquid inside the cassette tape deck. Electric shock or malfunction may result.

Please, record and retain the Model name and serial number of your set shown on the rating label.

Model No. DRW-840

Serial No. _____



CAUTION

**RISK OF ELECTRIC SHOCK
DO NOT OPEN**



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user of the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user of the presence of important operating and maintenance (servicing) instruction in the literature accompanying the appliance.

• FOR U.S.A. & CANADA MODEL ONLY

CAUTION

TO PREVENT ELECTRIC SHOCK DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

• POUR LES MODELES AMERICAINS ET CANADIENS UNIQUEMENT

ATTENTION

POUR PREVENIR LES CHOCS ELECTRIQUES NE PAS UTILISER CETTE FICHE POLARISEE AVEC UN PROLONGATEUR UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ETRE INSEREES A FOND SANS EN LAISSER AUCUNE PARTIE A DECOUVERT.

IMPORTANT (BRITISH MODEL ONLY)

The wires in this mains lead are coloured in accordance with the following code:

Blue: Neutral Brown: Live

The colours of the wires in the mains lead of this apparatus may not correspond with the coloured markings identifying the terminals in your plug proceed as follows.

The wire which is coloured blue must be connected to the terminal which is marked with the letter N or coloured black.

The wire which is coloured brown must be connected to the terminal which is marked with the letter L or coloured red.

FOR YOUR SAFETY

(AUSTRALIAN MODEL ONLY)

To ensure safe operation, the three-pin plug supplied must be connected only with a standard three-pin power point which is effectively earthed through the normal household wiring.

Extension cords used with the equipment must be three-core and be correctly wired to provide connection to earth. Wrongly wired extension cords are a major cause of fatalities.

The fact that the equipment operates satisfactorily does not imply that the power point is earthed and that the installation is completely safe. For your safety, if in any doubt about the effective earthing of the power point, contact a qualified electrician.

• NUR FÜR EUROPÄISCHE MODELLE

Konformitätserklärung

Die DENON Electronic GmbH
Halskestraße 32
4030 Ratingen 1

Erklärt als Hersteller/Importeur, daß das in dieser Bedienungsanleitung beschriebene Gerät den Technischen Vorschriften für Ton- und Fernseh-Rundfunkempfänger nach der Amtsblattverfügung 868/1989 (Amtsblatt des Bundesministers für Post und Telekommunikation vom 31. 8. 1989) entspricht.

Thank you very much for purchasing the DENON component stereo cassette tape deck.

DENON proudly presents this advanced tape deck to audiophiles and music lovers as a further proof of DENON's non-compromising pursuit of the ultimate in sound quality. The high quality performance and easy operation are certain to provide you with many hours of outstanding listening pleasure.

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Please check to make sure the following items are included with the main unit in the carton:

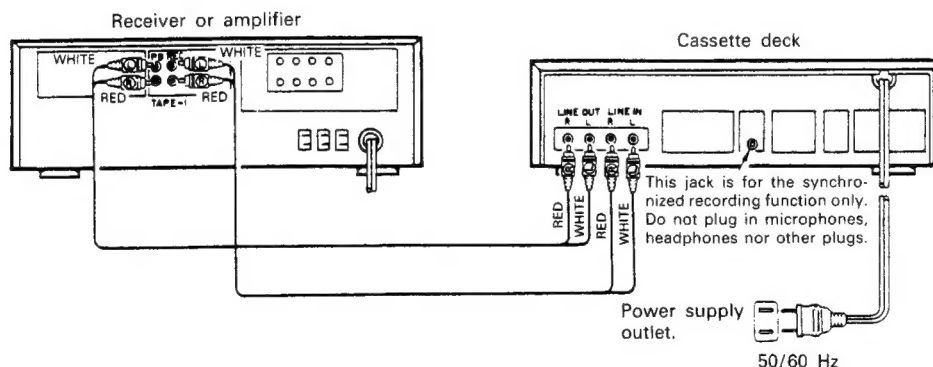
- (1) Operating Instructions 1
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FEATURES

- Computer Controlled Mechanism
- Dual Power Supply
- Dolby HX-Pro Headroom Extension System
- Dolby B & C Noise Reduction Systems
- Manual Bias Adjustment Control
- Computing Tape Counter with 4-Digit Readout and Memory Stop
- Music Search System
- FL Peak Level Meters
- Auto Tape Selector
- 2-Speed Dubbing
- Relay Playback
- Synchronized Recording
- Optional Remote Controllable
- Twin Recording and Relay Recording

CONNECTION

- Leave your entire system (including this cassette deck) turned off until all connections between the deck and other components have been completed.



■ Connecting the Deck to an Amplifier

- Before connecting the deck to your amplifier, please review your amplifier's instruction manual.
- Use the white plugs for the left channel and red plugs for the right channel.

■ Tape Dubbing

- Many stereo amplifiers and receivers have tape dubbing circuitry so that tape duplication can be performed between two or more tape decks. Review your amplifier's instruction manual for a full explanation of this mode of operation.

■ Connecting Headphones

To listen through headphones, plug your headphones into the PHONES jack.

■ Installation Precautions

If the deck is placed near an amplifier, TV or tuner, noise (induced hum) or beat interference may result, especially during FM or AM reception. If this occurs, place the deck further away from other components or reorient its position.

NAMES AND FUNCTIONS OF PARTS

1 Power Switch (POWER)

Press once to turn the power to deck on, and once more to turn the power off.
The deck remains in a stand-by (non-operative) mode for approximately 2 seconds after it is switched on.

2 Eject Button (EJECT ▲)

Press this button to open the cassette compartment cover. When the tape is running, press the STOP (■) button first to stop tape transport, then press the Eject button.

3 Counter Reset Button (COUNTER RESET)

Press this button to reset the tape counter to zero.

4 Counter Display Deck A/B Selector (COUNTER A/B)

Press this button to switch the tape counter display between deck A and deck B.

5 Counter Memory Button (MEMO)

When this button is pressed during forward tape travel (▶), fast rewinding (◀) will stop automatically at the tape counter position "0000".

When this button is pressed during reverse tape travel (◀), fast forwarding (▶) will stop automatically at the tape counter position "0000". See page 12.

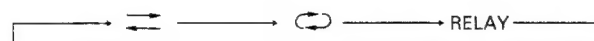
6 Dolby NR Switch (DOLBY NR)

To record or playback tapes with Dolby B- or C-type noise reduction, set this switch to "B" or "C". Turn it off when not using the Dolby NR system.

7 Reverse Mode Button (REV. MODE)

Select the type of tape transport. The reverse mode can be set to (one side), (continuous playback), RELAY (relay playback).

If you further press the button during the display, the reverse mode will change in the following cycle.



15 Tape Transport Buttons

PLAY	Play Button	Press to playback tape.
■	Stop Button	Press to stop the tape in any mode.
◀◀	Fast Rewind Button	Press for fast rewind.
▶▶	Fast Forward Button	Press for fast forwarding.
● REC/REC MUTE	Rec/Rec Mute Button	Press the REC/REC MUTE (●) button and PLAY button simultaneously to start recording. If only the REC/REC MUTE (●) button is pressed, the deck enters the Recording Pause mode. Pressing this button in the Recording Pause mode will start Auto Rec Mute, and a 5-second silent space is recorded onto the tape. See page 9.
 REC PAUSE	Rec Pause Button	Press this button to enter the recording pause mode from the recording or recording mute mode. This button can only be used during recording. See page 9.
◀▶	Direction Button	Changes the tape transport direction from forward "▶" to reverse "◀", and vice versa.

8 Dubbing Speed Buttons (DUBBING SPEED)

Pressing the NORMAL button starts regular speed dubbing from deck A to deck B. Press the HIGH button to perform dubbing at double speed. See page 10.

9 Bias Fine Control (BIAS FINE)

(For Normal, CrO₂ and Metal tape)
Use this control to fine-adjust the bias. Standard bias is obtained at the center click-stop position. See page 9.

10 Input Level Control (INPUT LEVEL)

This knob adjusts the recording input level. It affects the level in both channels. See page 8.

11 Cassette Compartment Cover

If the cover is not closed completely, the tape transport buttons will remain inoperative.

12 Headphone Jack (PHONES)

For private music enjoyment without disturbing others, or for monitoring a recording, a headphone set may be connected to this jack. Use a headphone with an impedance rating of 8 to 1200 ohms.

13 Remote Sensor (REMOTE SENSOR)

With the cassette deck the remote control unit is not included. Each of "PLAY, FF, REW, STOP, REC PAUSE and REC/REC MUTE" functions can be remote controlled with wireless handset of the receiver (DRA Series receivers). For details refer to the DRA Series operating instructions.

NOTE:

Note that only the A deck can be operated with remote control units which have no A/B selector button.

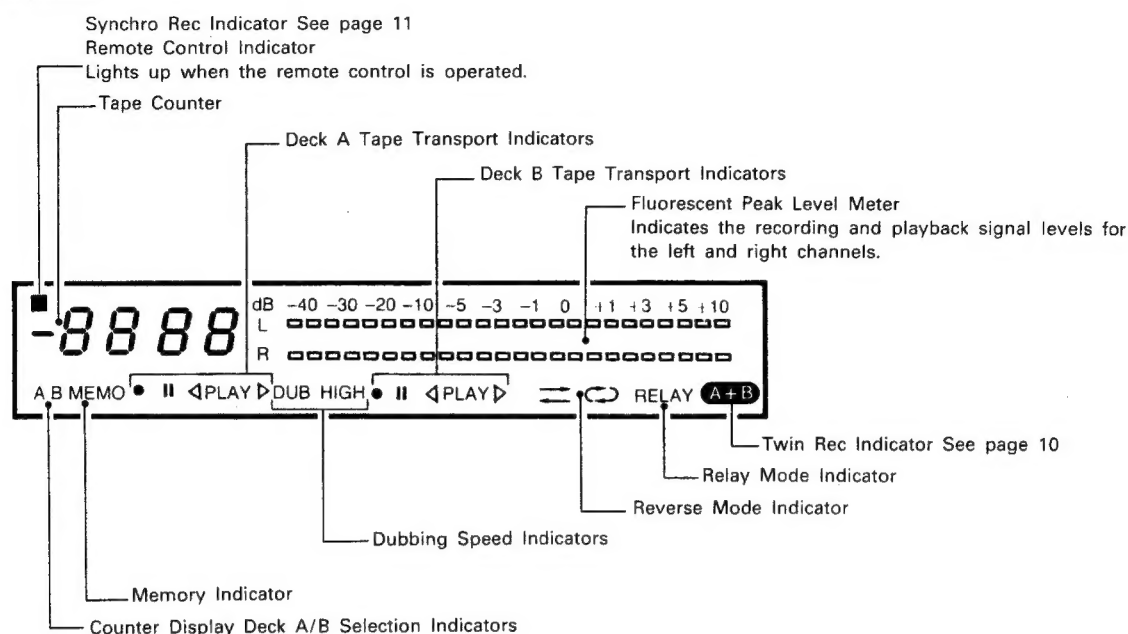
When operating the B deck with remote control units equipped with an A/B selector button, press A/B selector button before pressing the operation button.

14 Twin Recording Button (TWIN REC)

Pressing this button will set both deck A and B to the recording pause mode. See page 10.

16 Display

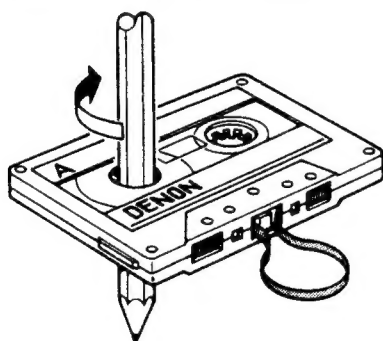
Indicators with an encircled number light up when the corresponding button is pressed.



CASSETTE TAPES

■ Handling Precautions

- C-120 Cassettes
C-120 cassette tapes are not recommended as they use a very thin tape base which may become tangled around the capstan or pinch roller.
- Tape Slack
Before putting a tape into the deck, take up any slack with a pencil or your finger tip. This precaution prevents the tape from becoming entangled around the capstan or pinch roller.



■ Storage Precautions

- Do not store cassette tapes in a place where they will be subject to:
 - Extremely high temperature or excessive moisture
 - Excessive dust
 - Direct sunlight
 - Magnetic fields (near TV sets or speakers)
- To eliminate tape slack, store your cassettes in cassette cases with hub stops

■ Accidental Erasure Prevention

- All cassettes have erasure prevention tabs for each side. To protect valuable recordings from accidental or inadvertent erasure, remove the tab for the appropriate side with a screwdriver or another tool.
- To record on a tape whose erasure prevention tabs have been removed, cover the tab holes with adhesive tape.



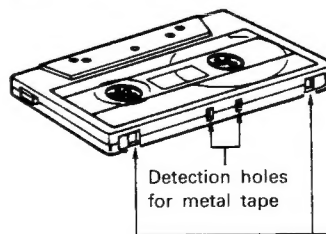
Erasure prevention tab for side A

Erasure prevention tab for side B

AUTOMATIC TAPE SELECTION

This Stereo Cassette Deck contains an automatic tape selector which automatically selects the optimum bias and equalization for the tape in use. This is accomplished by detection of the tape type detection holes in the cassette housing.

- If a tape without tape type detection holes is used, the deck will be set for normal tapes.








Detection holes for metal tape

Detection holes for chrome tape



PLAYBACK

- The operations described below apply to deck A and deck B alike.
- Switch on your amplifier or receiver.
- Set the Tape Monitor switch on your amplifier or receiver to the TAPE position.
- The numbers in the illustration below depict the order in which operation steps are carried out.



- 1 Press the POWER switch ❶ to the ON () position.
- 2 Press the EJECT () button ❷ to open the cassette compartment cover ❶.
- 3 Load the cassette tape and close the cassette compartment cover ❶.
- 4 When listening to a tape that has been recorded with Dolby noise reduction, set the DOLBY NR switch ❸ to match the system used at the time of recording.







Dolby NR System	Switch Setting
B	
C	
OFF	

- 5 Press the Direction () button ❸ to select the direction of tape transport.


Transport Direction	Indicator
Forward	
Reverse	

- 6 Select the type of tape transport with the REVERSE MODE button ❹.

Mode	Indicator
To listen to one side only	
To listen to repeat playback of both sides	
To listen to continuous playback of both sides and both decks.	RELAY









- 7 Press the PLAY button ❶ to begin playback. The PLAY ( or ) indicator will light during playback.
- 8 Press the stop () button ❶ to stop the playback.
 - In the continuous playback mode (REVERSE MODE set to ), playback of both tape sides will be repeated 5 times and then stop automatically.
 - If different types of Dolby noise reduction are used for record and playback, playback response will be adversely effected.
 - When power is turned off during tape transport, it may not be possible to remove the cassette by pressing the EJECT () button. In this case, turn on power again before you press the EJECT () button.

■ RELAY PLAY (continuous playback of the tapes in deck A and deck B)

- Load a cassette tape into deck A and B, and set the Dolby NR switch correctly.
- 1 REVERSE MODE set to "RELAY" ❹.
 - 2 Press the PLAY button ❶ of the deck you first wish to listen to. The PLAY indicator of the deck playing back the tape will light up.
 - 3 To stop relay play, press the stop () button ❶ of the deck currently playing the tape.
 - Relay play will play decks A and B in succession for 5 cycles, upon which playback stops. When playback starts from deck B, when switching to deck A, the first deck A playback cycle will be counted as the second cycle. The completion of 5 cycles will always be at the opposite side of the tape in deck B.

■ MUSIC SEARCH SYSTEM

The music search system detects blank sections (lasting for at least 4 seconds) between selections in order to locate the beginning of selections in the forward or reverse direction.

1. To advance from the current selection to the beginning of the next selection (CUE):
Press the PLAY button simultaneously with the Fast Forward () button when the tape is travelling in the forward () direction. Press the PLAY button simultaneously with the Rewind () button when the tape is travelling in the reverse () direction.
The deck will skip the rest of the current selection and automatically resume play from the beginning of the next selection.
2. To repeat playback from the beginning of the current selection:
Press the PLAY button simultaneously with the Rewind () button when the tape is travelling in the forward () direction. Press the PLAY button simultaneously with the Fast Forward () button when the tape is travelling in the reverse () direction.
The deck will rewind the tape to the beginning of the current selection and automatically resume play from that point.
This is very convenient for repeating playback of the current selection.

Notes on Music Search Operation:




The search functions operates by detecting comparatively long, blank sections approximately 4 to 5 seconds long, in between recorded selections. Therefore, the system may not operate normally in the following cases:

- Recordings with discontinuous speech or conversation.
- Recordings with long periods of pianissimo (softly played music).
- Recordings with long silences.
- Blank sections with a high level of noise.
- Blank sections shorter than 4 seconds.
- If noise-emitting appliances, such as electric razors, drills, refrigerators, etc., are operated nearby.
- REV close the beginning of the program or CUE close to the ending.



RECORDING

- The operations described below apply to deck A and deck B alike.
- Switch on your amplifier or receiver and the source component.
- Set the Tape Monitor switch on your amplifier or receiver to the SOURCE position.

- ① Press the POWER switch ❶ to the ON (—) position.
- ② Load the cassette tape ❷, ❸.
(Check that the erasure prevention tabs of the cassette housing have not been broken off.)
- ③ Set the DOLBY NR switch ❹ to the appropriate position.

Recording with Dolby NR type B	
Recording with Dolby NR type C	
Recording without Dolby NR	

- ④ Press the Direction (◀▶) button ❺ to select the direction of tape transport.
- ⑤ Select the type of tape transport with the REVERSE MODE button ❻.

Mode	Indicator
To record on only one side	
To continuously record on both sides	 or RELAY

- ⑥ Press the REC/REC MUTE (●) button ❽ to set the recording pause mode. The ● indicator will light up.
- ⑦ Adjust the recording level with the INPUT LEVEL control ❾ while watching the Peak Level Meter.
- ⑧ Press the PLAY button ❿ to start the recording.
The PLAY (◀▶) and the ● indicator will light during recording.
- ⑨ To stop recording, press the stop (■) button ⓫.
- ⑩ To pause the recording, press the REC PAUSE (⏏) button ⓬. Press the PLAY button ❿ to resume recording.

Caution:

- Be careful not to erase important recordings by mistake. Inadvertent start of recording will happen in the following cases:
 1. If the PLAY button is pressed while the ● indicator lights, recording starts.
 2. If the PLAY and REC/REC MUTE (●) button are pressed at the same time, recording starts.
- The best way to avoid accidental erasure is to break off the two erasure prevention tabs on the cassette housing.

■ PROPER RECORDING LEVEL

A too high recording level can saturate the tape and cause distortion. On the other hand, if the recording level is set too low, soft passages will be marked by residual noise. A proper recording level is the single most important factor for making well balanced recordings.

Guideline for maximum recording level

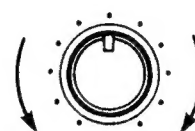
TYPE I (Normal)	0 dB level on peaks
TYPE II (CrO ₂)	+1 dB level on peaks
TYPE IV (Metal)	+3 dB level on peaks

Note: The optimum recording level differs depending on the program source and the type of tape used.

■ RECORDING BIAS ADJUSTMENT

For best recording results, monitoring during recording and comparing different recordings using your own judgement are essential.

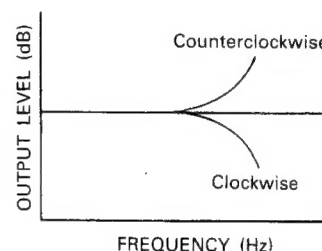
The DENON cassette deck is equipped with a BIAS FINE control to assist you in setting the proper bias for different types and brands of tape. At the center stop-click position, the deck is set to the reference bias level for Normal, CrO₂ and Metal tape. If the resulting recording in this position has too much or too little high frequency content, adjusting the BIAS FINE control can be useful to achieve better results.



BIAS FINE

If the high frequencies (treble sounds) are to be boosted, turn the BIAS FINE control counter-clockwise to decrease the bias current. Turn the control clockwise to increase bias current.

By the use of this control, you can record tapes with a frequency response that will perfectly match your listening taste.



■ REC/REC MUTE AND REC PAUSE Button

1. To record a 5-second blank section during recording:
Press the REC/REC MUTE (●) button. A 5-second blank will be recorded and the deck will enter the recording standby mode.
2. To record a 5-second blank section during the recording standby mode:
Press the REC/REC MUTE (●) button from the recording standby mode. A 5 second blank will be recorded and the deck will enter the recording standby mode again.
3. To cancel recording of blank space:
Press the REC PAUSE (⏏) button. Blank space recording will be cancelled and the deck enters the recording standby mode.
4. To extend the blank section with another 5 seconds or more:
Simply press the REC/REC MUTE (●) button and the blank section will be increased with another 5 seconds.

TWIN RECORDING (simultaneous recording on deck A and deck B)

This is a convenient feature for recording the same program source onto two tapes at the same time.

- Load cassette tapes into both deck A and B. Set the Dolby NR switch ⑥ and the REVERSE MODE button ⑦.

- ① Press the TWIN REC button ⑩. The **A+B** indicator will light up and both decks will enter the recording pause mode.
- ② Adjust the INPUT LEVEL control ⑪ for the best recording input levels while watching the Peak Level Meter.
- ③ Press the PLAY button ⑬ of deck B to start twin recording.
- ④ To stop twin recording, press the STOP (■) button ⑮ of each deck.

- By pressing the deck B REC PAUSE (II) button or the REC/REC MUTE (●) button, the recording pause or recording mute mode on both decks can be set automatically. The deck A (II) and (●) buttons cannot be used.
- To set the twin recording mute mode from the twin recording pause mode, press the REC/REC MUTE button (●) on deck B for at least 0.5 seconds.
- The relay mode cannot be set with the REVERSE MODE button when in the twin recording mode.

RELAY RECORDING (continues recording from deck A to deck B)

To record a long program, start recording on deck A, and when both sides of the tape in deck A have been recorded, the relay recording feature continues to record on the tape in deck B.

- Load cassette tapes into decks A and B, and set the Dolby NR switch.

- ① REVERSE MODE set to "RELAY" ⑦. The RELAY indicator will light.



Recording Order	
Deck A	Deck B
Side facing you → Opposite side	Side facing you → Opposite side

- ② Press the REC/REC MUTE (●) button ⑮ of deck A to set the recording pause mode.
- ③ Adjust the INPUT LEVEL control ⑪ for the best recording input level while watching the Peak Level Meter.
- ④ Press the PLAY button ⑬ of deck A to start relay recording.
- ⑤ To stop relay recording, press the STOP (■) button ⑮ of the deck that is recording.

DUBBING (from deck A to deck B)

- Switch on the amplifier or receiver.
- Set the Tape Monitor switch on your amplifier or receiver to the TAPE position.

- ① Press the POWER switch ① to the ON (—) position.
- ② Load the cassette tape to be played in deck A and the one to be recorded in deck B ②, ①.
- ③ Select the type of tape transport with the REVERSE MODE button ⑦.

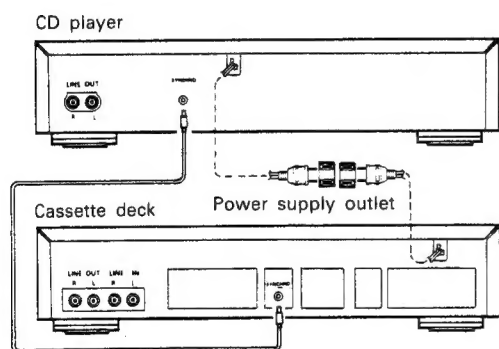
Reverse mode	Operation
	Dubbing is performed only for one side. The decks stop when either deck A or B reaches the end of the tape.
	The tape direction is reversed on each deck when they reach the end of the tape. (This is convenient for dubbing to a tape with a different length.)
RELAY	During dubbing of the side facing you, the deck that first reaches the end of the tape will stand by until the other deck reaches the end of the tape, then both decks will reverse the tape direction together. (Depending on the manufacturer, the length of tapes having the same recording time may differ somewhat. Setting this mode permits the arrangement of the beginning portion of the opposite side of the tape.)

- ④ To begin normal speed dubbing, press the DUBBING SPEED NORMAL button ⑧. The DUB indicator will light at this time. To high speed dubbing, press the DUBBING SPEED HIGH button ⑨. The HIGH indicator will light at this time.
- ⑤ To stop dubbing, press the stop (■) button ⑮ of deck A or deck B.
 - When deck A is in the playback mode and deck B is in the stop condition, setting deck B to the recording pause mode will engage the normal speed dubbing pause mode. Dubbing is then started by pressing the PLAY button.
 - When dubbing, the recording level and the Dolby NR coding will be the same as those of the playback tape, regardless of the positions of the INPUT LEVEL control and the DOLBY NR switch.
 - When listening to the playback sound during normal speed dubbing, set the DOLBY NR switch to match the Dolby NR system with which the playback tape was recorded. This will assure correct sound reproduction, but does not affect the recording.
 - The playback sound cannot be heard during high speed dubbing.
 - Operation using the REC/REC MUTE (●) and REC PAUSE (II) buttons of deck B is permitted during normal speed dubbing.
 - Buttons other than the stop (■) button cannot be used during high speed dubbing.

SYNCHRONIZED RECORDING FUNCTION

- Convenient synchronized recording can be performed when used in combination with a DENON CD player equipped for the synchronized recording function.
- **SYNCHRO Jack Connection** Connect the SYNCHRO Jack with a DENON CD player which is equipped with a SYNCHRO jack, then make a synchronized recording. Use the connection cord supplied with this cassette deck
- Switch on your amplifier or receiver and the CD player.
- Set the tape Monitor switch on your amplifier or receiver to the source position.

- ① Load the tape onto which you want to record into Deck B, the disc you want to record into the CD player.
- ② Following the recording instructions on page 9, set the Dolby NR mode, the direction, the reverse mode and the input level.
- ③ Set the CD player to the stop or pause mode.
- ④ Press the REC/REC MUTE (●) button and REC PAUSE (II) button simultaneously. The cassette deck and CD player are automatically set to the synchronized recording mode. The "■" indicator lights on the cassette deck and the synchronized recording mode is indicated on the CD player.
(For details, refer to the CD player's operating instructions.)
- ⑤ To stop synchronized recording, press the stop button on Deck B. The synchronized recording mode is cancelled for both the cassette deck and CD player.
- ⑥ To stop synchronized recording temporarily, press the stop button on the CD player. A 5-second blank space is created on the tape, after which the recording pause mode is set. The "■" indicator flashes. To resume synchronized recording, press the PLAY button on the CD player.



Note:

- If synchronized recording is started when the CD player is in a mode other than the stop or pause mode or when no disc is set, the "■" indicator on the cassette deck flashes and the recording pause mode is set until synchronized recording is possible on the CD player.
- In the synchronized recording mode, only the STOP button on Deck B and the STOP, FF and REW buttons on Deck A will function.

Caution:

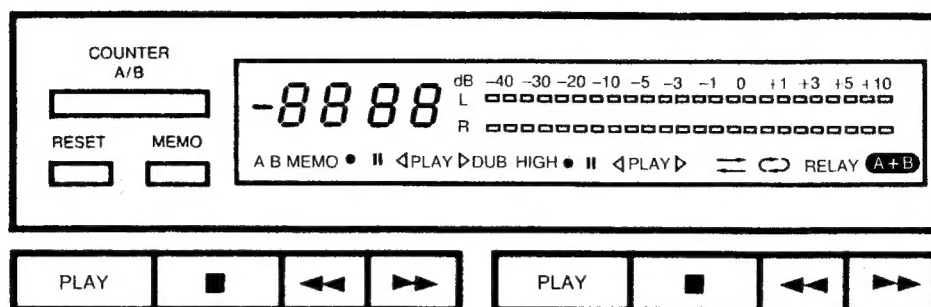
- Do not set the cassette deck to the synchronized recording mode when the CD player is in the play mode. Also, do not turn off the power of the cassette deck or the CD player during synchronized recording. Doing so can result in malfunction.
- During the editing operation, when using the editing functions on the CD player, be sure to select a tape with a sufficiently long recording time.
For the CD player's editing functions, refer to the CD player's operating instructions.

TWIN SYNCHRONIZED RECORDING

This is a convenient feature for synchronized recording the same program source onto two tapes at the same time.

- Load cassette tapes into both deck A and deck B. Set the Dolby NR, the direction, the reverse mode and the input level.
- ① Set the CD player to the stop or pause mode.
 - ② Press the TWIN REC button. The (A+B) indicator will light up and both decks will enter the recording pause mode.
 - ③ Press the REC/REC MUTE (●) button ⑬ and REC PAUSE (II) button ⑭ of deck B simultaneously. The cassette deck and CD player are automatically set to the twin synchronized recording mode. The "■" indicator lights on the cassette deck and the synchronized recording mode is indicated on the CD player.
 - ④ Stop synchronized recording, press the STOP button on both deck A and B.
 - ⑤ To stop twin synchroized recording temporarily, press the stop button on the CD player. A 5-seconds blank space is created on the tape, after which the recording pause mode is set. The "■" indicator flashes. To resume twin synchronized recording, press the PLAY button on the CD player.

TAPE COUNTER AND MEMORY STOP



1) Operation of the Tape Counter

- (1) Press the RESET button to reset the counter to "0000".
- (2) By using the PLAY, FF, or REW functions, the reading of the counter will change to indicate index position.
 - During recording and playback operations, the counter is useful for noting the location of existing programs or positions where recording is to be started.
 - The reading of this counter does not correspond with that of any other deck.
- (3) Deck A and Deck B have the memory of their own counter. Operate COUNTER A/B to change Deck A or B to display its counter.

2) MEMORY STOP Operation

- (1) During recording or playback, the Memory Stop feature can be used to locate a particular point on the tape. Press the COUNTER MEMO button at the desired point.
- (2) The MEMO indicator lights.
- (3) When the Rewind (◀) button is pressed during forward tape travel (▶), or the Fast Forward (▶▶) button is pressed during reverse tape travel (◀), the tape is rapidly rewound (or advanced) until the counter indication of "0000" is reached.
 - The Memory Stop feature will rewind or forward the tape to within -5 counts in the forward (▶) direction (from "0000" to "-0005") and to within +5 counts in the reverse (◀) direction (from "0000" to "0005"). After this, several seconds are required for corrective operations.
 - The Memory Stop function operates independently in both directions for deck A and deck B. The MEMO indicator will switch over with the use of the COUNTER A/B button.

Caution:

If the memory stop operation is performed after repeated fast-forwarding or rewinding, the tape may not stop at the proper position.

DOLBY B AND C NOISE REDUCTION SYSTEM

- The Dolby noise reduction system substantially reduces the tape background noise (hiss) inherent in the cassette medium. Dolby B NR is most widely in use. However Dolby C NR is a much more recent development and represents significant improvements over Dolby B NR.
- Tape background noise consists primarily of high frequency information, which is particularly annoying during soft passages. The Dolby NR system increases the level of low volume mid- and high-frequency signals during recording and reduces the level of these signals by an identical amount during playback. As a result, the playback signal is identical to the original source, but the level of background noise generated by the tape is greatly reduced.

- The operating principle of Dolby C NR is similar to that of Dolby B NR except for the encoding/decoding response curves. The noise reduction effect obtained with Dolby C NR is up to 20 dB, compared to 10 dB with Dolby B NR. In addition, Dolby C NR uses an anti-saturation network and spectral skewing circuitry for a significant improvement in the dynamic range of the mid- to high-frequencies.

DOLBY HX-PRO HEADROOM EXTENSION SYSTEM

This deck is equipped with the Dolby HX-PRO headroom extension system. Since the system functions automatically during recording, no switching operation or adjustment is required. The system is effective with any type of Normal, CrO₂ and Metal tape. The Dolby HX-PRO headroom extension system functions during recording to raise the saturation level in the treble range. Therefore, most of the treble range components distorted or lost during recording on conventional cassette decks are more faithfully recorded on the new DENON cassette deck.

Features of the Dolby HX-PRO Headroom Extension System

- (1) Performance of Normal and CrO₂ tapes can be improved to very close of that offered by Metal tape.
- (2) The dynamics in the treble range are improved significantly.
- (3) Since no decoding is necessary during playback, the improved sound can be enjoyed on any type of tape deck, including portable players and car audio systems.
- (4) The system functions whether the Dolby B/C NR system is engaged or not.

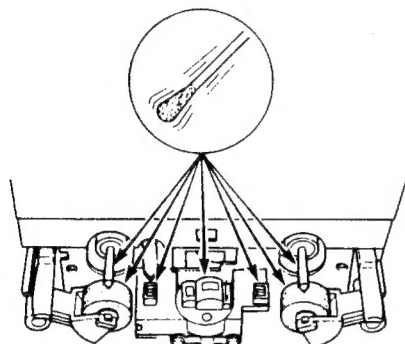
MAINTENANCE

■ Head Cleaning

After long usage, tape coating or dust may adhere to the heads, causing deterioration of sound. Therefore, the parts depicted in the illustration should be cleaned regularly. Use a cotton swab moistened with a tape head cleaning solution (such as alcohol).

Note:

1. Some cleaning cassettes on the market have strong abrasive effects and may scratch the heads. Always use cotton swabs instead of cleaning cassettes.
2. Since the use of metal tape is apt to collect more dust on the heads, the heads should be cleaned more often to enjoy the best possible sound.



■ Cleaning the Pinch Rollers and Capstans

If the pinch rollers or capstans accumulate dust, tape transport may become unstable, as a result from slippage, during recording or playback. The tape can also be damaged if it gets entangled in the capstan.

Clean these parts with a cotton swab or a soft cloth moistened with a tape head cleaning solution (such as alcohol).

■ Demagnetizing the Heads

The heads will become magnetized after long usage or if strongly magnetized objects are brought near them. The result is a generation of noise, loss of the high frequency range, and in extreme cases erasure of treble components on pre-recorded tapes in combination with added noise.

Thus, the heads should be demagnetized at regular intervals. (Head demagnetizers are separately available from your dealer.)

■ How to Demagnetize the Tape Heads

1. Turn off the power.
2. Turn on the demagnetizer while it is at least 30 cm away from the heads. Bring the demagnetizer near the heads and slowly move it in small circles four or five times in front of each head, making sure you do not touch them.
3. Slowly move the demagnetizer away and turn it off when it is at least 30 cm away from the heads.

TROUBLESHOOTING

Check the following before you draw the conclusion that your Stereo Cassette Deck is malfunctioning.

1. Are all the connections correct?
2. Are all system components being operated correctly in accordance with the operating instructions?
3. Are the speakers and amplifier/receiver functioning correctly?

If the tape deck still does not function properly, check the symptom against the list below. If the symptom does not correspond to the check list, please contact your DENON dealer.

Problem	Cause	Remedy
Tape does not run	<ul style="list-style-type: none"> • Power cord is disconnected. • Tape is loose. • Cassette is not loaded properly. • Defective cassette. 	<ul style="list-style-type: none"> • Check power cord. • Tighten tape with a pencil, etc. • Load cassette properly. • Replace cassette.
Tape is not recorded when REC/REC MUTE (●) button is pressed.	<ul style="list-style-type: none"> • No cassette is loaded. • Erase prevention tabs are broken off. 	<ul style="list-style-type: none"> • Load cassette. • Cover holes with adhesive tape.
Sound is warbled and distorted.	<ul style="list-style-type: none"> • Heads, capstan or pinch roller are dirty. • Tape is wound too tight. • Recording input level is too high. • Tape is worn out and has "drop-outs". 	<ul style="list-style-type: none"> • Clean them. • Fast forward or rewind to loosen tape winding. • Adjust recording input level. • Replace tape.
Excessive noise	<ul style="list-style-type: none"> • Tape is worn. • Heads, capstan or pinch roller are dirty. • Heads are magnetized. • Recording input level is too low. 	<ul style="list-style-type: none"> • Replace them. • Clean them. • Demagnetize heads. • Adjust recording input level.
High frequency range (treble) is emphasized.	<ul style="list-style-type: none"> • Dolby NR switch is set improperly. 	<ul style="list-style-type: none"> • Set Dolby NR Switch properly.
High frequency range (treble) is lost.	<ul style="list-style-type: none"> • Heads are dirty. • Tape is worn. 	<ul style="list-style-type: none"> • Clean them. • Replace tape.
The cassette tape cannot be removed.	<ul style="list-style-type: none"> • If the POWER switch is turned off either during recording or playback and the unit is stopped, there may be cases when the cassette cannot be removed, even if the EJECT (▲) button is pressed. 	<ul style="list-style-type: none"> • Turn the POWER switch ON (■) again, and then press the STOP (■) button. • Now, press the EJECT (▲) button to remove the cassette tape.


SPECIFICATIONS

Type	Vertical tape loading; 4-track 2-channel stereo double cassette deck
Heads	Recording/playback head × 2 Erase head (Double-gap ferrite) × 2
Motors	Capstan (DC servo motor) × 2 Real (DC motor) × 2
Tape Speed	4.8 cm/sec.
Fast Forward, Rewind Time	Approx. 110 sec. with a C-60 cassette
Recording Bias	Approx 105 kHz
Overall S/N Ratio (at 3% THD level)	Dolby C NR on: more than 74 dB (CCIR/ARM)
Overall Frequency Response	20 ~ 18,000 Hz ±3 dB (at -20 dB, Metal tape)
Channel Separation	More than 40 dB (at 1 kHz)
Wow & Flutter	0.06% WRMS, ±0.14% w. peak
Input	
LINE	80 mV (-20 dBm) input level at maximum Input impedance: 50 kohm unbalanced
Output	
LINE	775 mV (0 dB) output level at maximum (with 47 kohm load, recorded level of 200 pwb/mm)
PHONES	1.2 mW output level at maximum (optimum load impedance 8 ohm ~ 1.2 kohm)
Power Supply	50 Hz/60 Hz, voltage is shown on rating label
Power Consumption	27 W
Dimensions	434 (W) × 124 (H) × 275 (D) mm (17-3/32" × 4-57/64" × 10-53/64")
Weight	4.4 kg (9 lbs 11 oz)

* Above specifications and design are subject to change without prior notice.

Best results will be obtained with use of DENON DX and HD Series cassette tapes.

Dolby noise reduction and HX Pro headroom extension manufactured under license from Dolby Laboratories Licensing Corporation. HX Pro originated by Bang & Olufsen.

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